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ABSTRACT

A comparison was made between student achievement in traditional and alternative schools in the Aldine Independent School District during the 1988-89 school year. Aldine Contemporary Education Center (ACE), the alternative school studied, is located in Houston, Texas, and is one of a growing number of high schools that practice adaptive education in the form of an alternative school program. The educational program at ACE provides flexibility in time scheduling, course content, and elective selection. Students work at their most efficient speeds and progress as rapidly as their abilities will allow. Students participating in this study were enrolled in a regular physical science course. All students took the same 40 item physical science test. Findings indicated that the alternative school program at Aldine's ACE was successful in improving student achievement. The highest mean scores were obtained by the students at the alternative school. A variance and a multiple classification analysis is appended. (8 references) (SI)

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A CASE FOR ALTERNATIVE SCHOOLS: A LOOK AT STUDENT ACHIEVEMENT IN SELF-PACED PROGRAMS

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ABSTRACT

Alternative schools, like Aldine Contemporary Education Center (A.C.E.), enable today's students to achieve at their own pace. Alternative programs are usually self-paced, modularized, and competency based. In traditional schools, some students do not achieve to their full potential. They may have problems adjusting to the hour-by-hour schedule and the restrictions established in the schools. This study examines and compares student achievement at traditional high schools and A.C.E. Overall, the findings showed that a self-paced mode of instruction in an alternative program enhanced achievement more than group instruction in the traditional schools.

RATIONALE

Attempts to make schooling more effective by fitting instruction to students' individual needs have traditionally been described as approaches to individualized instruction. Recently the terms adaptive instruction or adaptive education have been used to label individualized programs (Good & Brophy, 1987). These terms are difficult to distinguish because they lack precise meanings. Some individualized instructional programs call for students to learn the same content using the same methods and materials but to progress at their own rate (such programs are similar to mastery learning programs, except that they lack the teach-test-reteach-retest cycle that typifies mastery approaches). Other individualized instructional approaches allow students to learn using different materials or methods but requires students to show mastery in the same way. Still others allow demonstration of mastery in different ways (write a report, take an exam, pass an oral quiz, etc.). Thus, individualized instruction implies some degree of planned differentiation in the treatment of students in the same class, but the degree of differentiation is substantial across various programs (Good & Brophy, 1987). Similar to individualized approaches, alternative schools are sources of improvement in education (Raywind, 1983).

A formal definition of an alternative is any school (or administrative unit) within a system of differentiated schools or units that are available on a choice basis. To qualify as an alternative under this definition, a candidate must: (a) Be an administrative unit with its own personnel and program: a school or a school-within-a-school, but not just a course or a course sequence. (b) Be open to all within the district on an optional, not assignment, basis. (c) Be a unit deliberately differentiated from others in order to accommodate learner needs or interests, or parental preferences (Raywind, 1983).

When attending a traditional high school, some students do not achieve to their full potential. Some are not suited to the restrictions of the regular high school, its rules, or its hour-by-hour structure. There are also times when personal obligations conflict with a standard high school program. Gold and Mann, as cited in Hawkins (1983), found that students attending alternative schools were less disruptive and improved their school performance. Taylor (1987), states that the "relaxed environment" appears to be largely responsible for the students' positive response to the program and that such schools tend to increase students' self-esteem. According to DeBlois (1989), alternative schools for students stand the best chance of succeeding if they are small and are located in a separate building, where both the students and teachers are able to develop their own

sense of identity. A program of this type will need to have as low a student/adult ratio as possible.

PROGRAM DESCRIPTION

Aldine Contemporary Education Center (A.C.E.), located in Houston,Texas, as part of the Aldine Independent School District, is one of a growing number of high schools that practices adaptive education in the form of an alternative school program. The educational program at A.C.E. provides flexibility in areas of time scheduling, choice of course content, and electives.

A.C.E. is a self-paced program in which students work at their most efficient speeds and are expected to progress as rapidly as his/her ability will allow. A.C.E. is also a competency-based program in which students must meet minimum requirements as set forth by the Texas Education Agency for each grade level and/or subject. However, students at A.C.E. have the opportunity to achieve far beyond the basic competency level. Also, students are not allowed to progress unless they show competency in the required skills. A.C.E. is a modularized program as well. The objectives, a list of the materials needed, the explanations, and the activities are all contained in booklets for the student's use. The teacher works with each student on an individual basis. Each student has the opportunity to pre-test out of some modules in order to arrive at the student's skill level.

The individualized instruction program at A.C.E. requires students to master the same content which is taught throughout the district but at the students' own pace. They demonstrate their mastery of the material by taking exams and writing reports (A.C.E., 1989). Students wishing to attend A.C.E. have to apply to get in. All students are eligible to attend. An interview with the principal at A.C.E. is required. The principal looks at standardized test scores such as the TEAMS test and makes sure that the student is at their grade level for reading and writing skills. Often, the deciding factor in a student selecting A.C.E. is the difference in the requirements for graduation. A.C.E. has a twenty-one credit requirement where as the traditional high schools require twenty-three credits. The advanced high school program at A.C.E. requires twenty-two credits while traditional high schools still require twenty-three.

Research has indicated that part of the problem in evaluating individualized programs is that their implementation differs from classroom to classroom and from year to year. The key, researchers say, seems to be the degree of implementation of the program developers' guidelines (Good & Brophy, 1987). Drawing from the work of Slavin, Good and Brophy (1987) suggest that for any kind of instruction to be effective, four conditions must be satisfied: (a) the instruction must be high in quality, (b)

the instruction must be appropriate to the students' levels, (c) the students must be motivated to work on the tasks, and (d) the students must have adequate time to learn. Even if such a program would meet Slavin's conditions, one tends to question the benefits of receiving instruction in an adaptive education program rather than in a traditional instructional setting. This leads to the research question which guided this inquiry.

RESEARCH QUESTION

Does a self-paced mode of instruction in an alternative high school produce students with higher levels of achievement compared to students who receive group paced instruction in a traditional setting?

SUBJECTS

Students participating in this study were high school students enrolled in a regular physical science course during the 1988-89 school year. The students attended one of the high schools in the Aldine Independent School District. With the cooperation of the high schools, the teachers, and the students, this study was able to examine the mode of instruction on student achievement from selected classes in physical science at Nimitz, MacArthur, Eisenhower, and Aldine Contemporary Education Center (A.C.E.). The traditional physical science classes were taught at Nimitz, MacArthur, and Eisenhower. A.C.E. is the school which has incorporated an alternative program.

As stated earlier, the subjects being studied were enrolled in a regular physical science course. The students at all four high schools experienced the same curriculum. However, students at the traditional high schools received their instruction through implemented lesson plans developed by the teachers. The students at A.C.E. received their instruction through a modularized program.

DATA COLLECTION AND ANALYSIS

In order to examine achievement of students enrolled in physical science, a test was administered at the end of the school year to one class of physical science students at each of the three high schools (Nimitz, Eisenhower, and MacArthur). The test was administered to only those students who started the physical science course at the beginning of the 1988-89 school year. This procedure was also conducted at A.C.E. with those students who started physical science at the beginning of the year. This selection rule ensured that the test results were gathered from individuals experiencing one full year of instruction.

Data were collected from a forty item physical science test that was developed for introductory physical science students in the Cypress Fairbanks School District. Each of the following topics represented on the test was cross referenced to the Essential Elements (EE) of physical science listed in the state of Texas Curriculum for public schools (1983). The test topics were laboratory safety,

laboratory apparatus, physics concepts, properties of matter, chemical concepts, and graph interpretation. The reliability of the test (Cronbach's Alpha) was determined to be .88.

At the end or the school year, students' test scores from all four high schools were compared. When calculating the statistics, I used a method called Breakdown (SPSSX, 1986). It calculated an ANOVA from the given data, and provided the mean score for each group which provided an answer to the question guiding this study: Will a self-paced mode of instruction in an alternative school produce students with higher levels of achievement as compared to students who receive instruction in a traditional high school setting?

FINDINGS

The mean scores for all the high schools are given in Table 1 (page 9). School 1 represents A.C.E., the alternative school, and schools 2-4 represent the traditional high schools. The largest class average (28.10) was obtained by the students at the alternative school. The class average was statistically different. When the scores were adjusted for the different class sizes, identical comparison values resulted. These calculations are provided in Table 2 (page 9). Therefore, unequal cell sizes did not affect the calculation of this experiment.

DISCUSSION

Through this study I have found that the alternative school program at Aldine's A.C.E. was successful in improving student achievement. The students in this investigation experienced academic success, some for the first time. Alternative schools, such as A.C.E., enhance academic achievement (Raywind, 1983). Most all alternative programs place high value on innovation, creativity, flexibility, and participatory decision-making between students and staff. A.C.E. upholds these values and believes that a critical goal for alternative education is to increase opportunity for academic success without compromising educational standards (Thomas, 1982). Many students have a hard time adjusting to the strict guidelines that traditional high schools have. They should be able to have the opportunity to attend an alternative school like A.C.E.

TABLE 1 ANALYSIS OF VARIANCE

SCHOOLS	MEAN	STD DEV	SUM OF SQ	CASES
1	28.10	4.09	317.80	20
2	19.67	6.95	2318.78	49
3	24.13	7.38	2399.20	45
4	24.78	8.98	5317.64	67
WITHIN GROUPS TOTAL	23.60	7.65	10353.42	181

SOURCE	SUM OF SQUARES	D.F.	MEAN SQUARE	F	SIG.
BETWEEN GROUPS	1265.94	3	421.98	7.21	.0001
	R=.0609	R SQUARED= .0037			
WITHIN GROUPS	10353.42	177	58.49		
	ETA= .3301	ETA SQUARED= .1090			

TABLE 2 MULTIPLE CLASSIFICATION ANALYSIS

GRAND MEAN= 23.60

SCHOOLS	N	UNADJUSTED DEV'N ETA	ADJUSTED FOR INDEPENDENTS DEV'N BETA
1	20	4.50	4.50
2	49	-3.93	-3.93
3	45	.53	.53
4	67	1.17	1.17
		.33	.33
MULTIPLE R SQUARED			.109
MULTIPLE R			.330

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